PB92-110006

Pesticide Fact Sheet Number 227: Gokilaht

(U.S.) Environmental Protection Agency, Washington, DC

1991

U.S. Department of Commerce
National Technical Information Service
NTIS

PB92-110006

United States Environmental Protection Agency

Office of Pesticides and Toxic Substances (H7501C)

540/FS-91-144

EPA

Pesticide Fact Sheet

Name of Chemical: (RS)-alpha-cyano-3-phenoxybenzyl (1R) -cis, trans-chrysanthemate

Reason for Issuance: New Chemical Registration

Date Issued:

Fact Sheet Number: 227

1. Description of the Chemical

Generic Name:	(RS)-alpha-cyano-3-phenoxybenzyl (1R)-cis,trans-chrysanthemate
Common Name:	None
Trade Names:	Gokilaht
Other Names:	Cyphenothrin and S-2703F
EPA Shaughnessy Code (OPP Chemical Code):	128898
Chemical Abstracts Service (CAS) Number:	39515-40-7
Year of Initial Registration:	1991
Pesticide Type:	Insecticide
Chemical Family:	Pyrethroid
Producer:	Sumitomo Chemical Company, Ltd.

2. Use Patterns and Formulations:

Application Sites: Residential Indoors (Kitchens, living areas, garages, attics, basements and pet living area).

Type and Methods of Application: Fumigator Fogger, Manufacturing Use.

Rate of Application: One unit (0.42 oz) treats up to 3000 cu/ft.

Types of Formulations: 92% Manufacturing Use (Gokilaht); 6.48% Fumigating Fogger (Red Earth(R) G-8-F Aqua Fumigator).

Usual Carriers: Blowing agent.

Target Pests: Roaches (Palmetto & Water Bugs), Adult Fleas, Ticks, Mosquitoes, Flies, Ants and Spiders.

Limitation: Residential Indoor Use. Not for use in Commercial Food/Feed Handling Establishments, Restaurants or other areas where food/feed is commercially processed or prepared.

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA 22161

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO.	2.	3. PB92-110006
4. Title and Subtitle EPA Pesticide Fact Sheets - Gokilaht No. 227			5. Report Date October 4, 1991 6.
7. Author(s) EPA, Office of Pesticide Programs, Registration Division			8. Performing Organization Rept. No. 540/FS-91-144
9. Performing Organization Name and Address U.S. Environmental Protection Agency Office of Pesticide Programs Registration Division (H7505C) 401 M Street, SW Washington, D.C. 20460			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address Same as #9			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document,
3. Registration of a significantly changed use pattern,
4. Registration of a new chemical, or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors

Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, science findings.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement:	19. Security Class (This Report)	21. No. of Pages
Publicly Available	Unclassified	6
	20. Security Class (This Page) Unclassified	22. Price

(See ANSI-Z39.18) See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

3. Science Findings

Summary Statement: The end-use product (RED EARTH(R) G-8-F Aqua Fumigator) has a low acute oral, dermal, inhalation and eye/skin irritation toxicity and is assigned to Toxicity Categories III/IV (Caution). It is a moderate sensitizer. The manufacturing use product (MUP) is moderately toxic to mammals by the oral and inhalation routes, with rat oral LD_{50} values of 318 (219-463) mg/kg (males); 419 (281-624) mg/kg (females) and acute inhalation LC_{50} greater than 1.850 mg/l. The MUP has low acute toxicity through the dermal and eye/skin routes of exposure. There is no evidence of significant sub-chronic toxicity (from repeated exposure for a period of six months) in a 6-month feeding study (100, 300, 10900 ppm) in rats at dose levels up to and including 10900 ppm. No developmental toxic effects were observed in rats at dose levels greater than 500 mg/kg/day, highest dose tested (HDT). The MUP is not found to be mutagenic. The MUP is very highly toxic to aquatic organisms (trout LC_{50} = 0.34 ug/L; Daphnia magna LC_{50} 0.43ug/L) but practically non toxic to avian species (Bobwhite Quail LD_{50} > 5620 ppm). No environmental fate & groundwater data was submitted since the use pattern is domestic indoor use.

Chemical Characteristics: **(Manufacturing Use Grade)(Gokilaht)**

Physical:	Viscous liquid.
Color:	Yellowish.
Odor:	Faint Characteristic.
Melting Point:	Not Applicable.
Boiling Point:	154°C at 0.1 mm Hg.
Specific Gravity:	1.080 at 25°C.
Molecular Formula:	$C_{24}H_{25}NO_3$
Molecular Weight:	375.47
Solubility:	less than 10 ppb for water. Described as "miscible (homogeneous at any mixture rate)" with a variety of solvents including xylene, kerosene, Tenneco 500-100, methanol, acetone, and paraffinic oil (room temperature, 22-25°C).
Vapor Pressure:	8.7×10^{-7} mm at 20°C, 3.0×10^{-6} at 30°C, 1.21 mm Hg at 200°C, 67.2 at 300°C.

Octanol/Water Partition Coefficient: Log P = 6.29 (room temperature).

Flammability: Flash point=130°C.

Explodability: This product does not explode on impact.

Storage Stability: 24 months stoppered at room temperature in coating-can and polyethylene bottle resulted no change in % active (± 0.2%).

Toxicology Characteristics

Technical Formulation:

- Acute Oral Toxicity (Rats): LD_{50} = 318 (219-463) mg/kg (Males), 419 (281-624) mg/kg (Females). Toxicology Category II.

- Acute Dermal (Rat): LD_{50} > 5000 mg/kg (HDT) for both males & females. Toxicology Category III.

- Acute Inhalation LC_{50} (Rats): LC_{50} = > 1.850 mg/l (1850 mg/m^3). Toxicology Category II.

- Primary Eye Irritation (Rabbits): No corneal involvement. Mild conjunctival irritation. Toxicity Category IV.

- Skin irritation (Rabbits): Non-irritating to intact and abraded skin. Toxicology Category IV.

- Dermal Sensitization (Guinea Pigs): Not a sensitizer.

- Six Month Subchronic Feeding (Rats): No Observable Effects Level (NOEL) > 1000 ppm (56.4 and 65.2 mg/kg/day for males and females respectively)

- Developmental Toxicity: (Rats)
  Maternal NOEL = 150 mg/kg/day.
  Maternal Lowest Effect Level (LEL) = 500 mg/kg/day (HDT).
  Developmental NOEL = 500 mg/kg/day (HDT).

- Developmental Toxicity (Rabbits):
  Developmental Toxicity NOEL >125 mg/kg/day (HDT).
  Fetotoxic NOEL >250 mg/kg/day (HDT).

- Developmental Toxicology (Rabbits:
  Developmental Toxicity NOEL >250 mg/kg/day (HDT).
  Fetotoxic NOEL >250 mg/kg/day (HDT).
  Maternal NOEL >250 mg/kg/day (HDT).

- Mutagenicity Studies:

A. Mutagenic-Ames: Negative for Salmonella TA98, TA100, TA1535, TA1537, and TA1538, and E. coli WP-2(trp-) uvrA strains with and without metabolic activation. There was no evidence of cytotoxicity.

B. Sister chromatid exchange: Negative for induction of sister chromatid exchange with or without metabolic activation.

C. Mutagenic-micronucleus assay: Negative for induction of micronuclei.

End-Use Formulation: (Red Earth(R) G-8-F Aqua Fumigator)

- Acute Oral Toxicity (Mice): LD_{50} = 8359 (6760-12,847) mg/kg (Male), > 10,00 mg/kg (Female). Toxicity Category IV

- Acute Oral Toxicity (Rat): LD_{50} = > 10,000 mg/kg(both sexes). Toxicity Category IV.

- Acute Dermal Toxicity (Mice & Rats): LD_{50} = > 5000 mg/kg (HDT) (both sexes). Toxicity Category IV.

- Acute Inhalation (Rats): No lethal LC^{50} doses were obtained (both sexes). Analytical concentration of 1.49 mg/l for 4 hrs. Toxicity Category III.

- Primary Eye Irritation (Rabbits): No corneal or iridic irritation. Mild conjunctival redness and mild to moderate chemosis and discharge were seen in unwashed eyes 1 and 24 hours after dosing. Mild chemosis one hour after dosing was the only irritation seen in washed eyes. Toxicity Category III.

- Primary Dermal Irritation (Rabbits): There were no signs irritation on abraded or unabraded skin. Toxicity Category IV.

- Dermal Sensitization (Guinea Pigs): Moderate sensitizer.

Physiological and Biochemical Characteristics:

Foliar Absorption: N/A

Translocation: N/A

Mechanism of Pesticide Action: Neurotoxicity characteristic of pyrethroid insecticide (contact action).

Environmental Fate and Groundwater Characteristics:

Not applicable for indoor use.

Tolerance Assessment:

Not applicable for indoor non-food use.

Ecological Effects Characteristics:

Avian Dietary
Bobwhite quail: LD_{50} = > 5620 ppm (Low toxicity).

Freshwater Fish
Rainbow trout: LC_{50} = 0.34 (0.14 - 0.64) ug/L (96 hr.) (Highly toxic).

Aquatic Invertebrate
Daphnia magna: LC_{50} = 0.42 ug/L (0.28 - 0.54)ug/L (48 hr) (Highly toxic).

Summary of Regulatory Position and Rationale

The Agency has determined that it should allow the unconditional registration of the end-use product Red Earth(R) G-8-F Aqua Fumigator (containing 6.48% (RS)-alpha-cyano-3-phenoxybenzyl (1RS) cis, trans-chrysanthemate) to control pests for residential indoor use since all of the data to support this use pattern have been submitted, reviewed and found acceptable. Adequate data are available to assess the acute and chronic effects of the end-use formulation and technical product to humans. Based on exposure to aquatic organisms and terrestrial wildlife from residential indoor use, adverse effects to nontarget organisms and endangered species are unlikely. Likewise, surface and groundwater contamination is unlikely to occur from residential indoor use.

5. Summary of Data Gaps

None

6. Required Unique Labeling Summary

None

7. Contact Person at EPA

George T. LaRocca
Product Manager 15
Insecticide-Rodenticide Branch
Registration Division (H7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
401 M Street S.W.
Washington, D.C. 20460

Office Location and Telephone Number:

Room 204, Crystal Mall # 2
1921 Jefferson Davis Highway
Arlington, VA 22202
(703) 557-2400

DISCLAIMER: The information presented in this Chemical Information Fact Sheet is for informational purposes only and may not be used to fulfill data requirements for pesticide registration and reregistration.